

ROMÂNIA
MINISTERUL EDUCAȚIEI, CERCETĂRII, TINERETULUI ȘI
SPORTULUI

CURRICULUM PLAN
Valid from academic year **2012 – 2013**

UNIVERSITY OF ORADEA

Faculty: **FACULTY OF CIVIL ENGINEERING
AND ARCHITECTURE**

Study program: **SANITARY ENGINEERING AND
ENVIRONMENTAL
PROTECTION**

Fundamental field of study: **ENGINEERING SCIENCES**

Bachelor field of study: **CIVIL ENGINEERING**

Duration of studies / number of credits: **4 years / 240**

Type of studies: **Full-time (FT)**

1. **The mission of the study program Sanitary Engineering and Environmental Protection** is to create, exploit and disseminate knowledge to the students of this study program in order to form specialists in hydro-technical constructions as well as environmental protection domain.
2. **The objectives of study program Sanitary Engineering and Environmental Protection**

The overall objective is the formation of specialists with bachelor's degree in Civil Engineering domain, specialty Sanitary Engineering and Environmental Protection.

The educational objectives, formulated from the perspective of the teaching staff and resulted by dividing the competences in two dimensions:

- a) Professional competences
- b) Transversal competences

3. Competences acquired upon finalization of studies

Professional competences

- Recognizing the elements and structures from Civil Engineering domain, specialty Sanitary Engineering and Environmental Protection;
- Sizing the constructions elements from Civil Engineering domain, specialty Sanitary Engineering and Environmental Protection.
- Technological and economic design for implementation, exploitation and maintenance works of constructions from Civil Engineering domain, specialty Sanitary Engineering and Environmental Protection;
- Organization and management of execution, exploitation and maintenance process of constructions from Civil Engineering domain, specialty Sanitary Engineering and Environmental Protection;
- Comply with safety requirements, functionality and durable development for hydro-technical and protection works and environmental reconstruction.

Transversal competences

- Implementation of strategies for efficient and reliable works, punctuality, reliability, and personal responsibility, based on principles, norms and professional ethics values;
- Applying techniques of efficient team work, on different hierarchical levels;
- Documentation in Romanian language and in another foreign language, for professional and personal development, through continuous training and effective adaptation to new technical specifications.

4. Finalities

The graduates of bachelor degree's diploma of university study program will have access to the following possible jobs according to the "Classification of Occupations in Romania" – ISCO – 08:

- Sanitary Engineering and Environmental Protection Engineer;
- Civil, Industrial, Agricultural Engineering Engineer;
- Design engineer in constructions;
- Building site inspector;
- Environmental protection inspector
- Secondary education teacher.

CURRICULUM PLAN**Year of study I**

| Code | Subjects | Type | Semester I | | | | | Total no of hours | Conditioning | Type of evaluation | Credits | SI [hours] |
|-----------------------------|--|-----------|------------|----------|----------|----------|-----|-------------------|--------------|--------------------|-----------|------------|
| | | | C | S | L | P | Pr. | | | | | |
| Compulsory | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DF.01.01 | Mathematical analysis/ Analiză matematică | DF | 2 | 2 | - | - | | 56 | | Ex | 4 | 56 |
| UO.AC.IC.ISPM.DF.01.02 | Linear algebra, analytical and differential geometry/ Algebra liniară Geometrie analitica si diferenciala | DF | 2 | 2 | - | - | | 56 | | Ex | 4 | 56 |
| UO.AC.IC.ISPM.DF.01.03 | Water chemistry / Chimia apei | DF | 2 | - | 1 | - | | 42 | | Vp | 3 | 42 |
| UO.AC.IC.ISPM.DF.01.04 | Computer programming and programming languages I/ Programarea calculatoarelor si limbaje de programare I | DF | 2 | - | 2 | - | | 56 | | Cv | 4 | 56 |
| UO.AC.IC.ISPM.DD.01.05 | Topography/ Topografie | DD | 2 | - | 2 | - | | 56 | | Ex | 5 | 84 |
| UO.AC.IC.ISPM.DF.01.06 | Descriptive geometry/ Geometrie descriptiva | DF | 2 | - | 2 | - | | 56 | | Vp | 5 | 84 |
| UO.AC.IC.ISPM.DC.01.07 | Foreign language I/ Limba straina I | DC | - | 1 | - | - | | 14 | | Vp | 2 | 42 |
| UO.AC.IC.ISPM.DF.01.08 | Physics/ Fizica | DF | 2 | - | 1 | - | | 42 | | Vp | 3 | 42 |
| | Total | 27 | 14 | 5 | 8 | - | | 378 | | | 30 | 462 |
| Facultative Subjects | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DC.01.09 | Physical education I/ Educație fizică I | DC | - | - | 1 | - | | 14 | | Vp | 1 | 14 |
| UO.AC.IC.ISPM.DC.01.10 | European integration / Integrare europeană | DC | 2 | - | 1 | - | | 42 | | Cv | 3 | 42 |
| UO.AC.IC.ISPM.DC.01.11 | European culture and civilization / Cultură și civilizație europeană | DC | 1 | 1 | - | - | | 28 | | Cv | 2 | 28 |
| UO.AC.IC.ISPM.DC.01.12 | History of civilization and science/ Istoria civilizației și științei | DC | 2 | 2 | - | - | | 56 | | Ex | 5 | 84 |

| Code | Subjects | Type | Semester II | | | | | Total no of hours | Conditioning | Type of evaluation | Credits | SI [hours] |
|------------------------|--|------|-------------|---|---|---|-----|-------------------|--------------|--------------------|---------|------------|
| | | | C | S | L | P | Pr. | | | | | |
| Compulsory | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DF.02.01 | Special mathematics/ Matematici speciale | DF | 2 | 2 | | - | - | 56 | | Ex | 4 | 56 |
| UO.AC.IC.ISPM.DD.02.02 | Engineering geology / Geologie inginereasca | DD | 1 | - | 1 | - | | 28 | | Ex | 3 | 56 |
| UO.AC.IC.ISPM.DD.02.03 | Mechanics I/ Mecanică I | DD | 2 | 1 | 1 | - | - | 56 | | Ex | 5 | 84 |
| UO.AC.IC.ISPM.DF.02.04 | Computer programming and programming languages II/ Programarea calculatoarelor si limbaje de programare II | DF | 1 | - | 2 | - | - | 42 | | Ex | 3 | 42 |

| | | | | | | | | | | | | |
|------------------------|---|-----------|-----------|----------|-----------|----------|----------|------------|----------------------|----------|-----------|------------|
| UO.AC.IC.ISPM.DF.02.05 | Technical drawing and Infographics I/ Desen tehnic si Infografica I | DF | - | - | 3 | - | - | 42 | | Vp | 4 | 70 |
| UO.AC.IC.ISPM.DD.02.06 | Building materials / Materiale de constructii | DD | 3 | - | 2 | - | - | 70 | | Ex | 5 | 70 |
| UO.AC.IC.ISPM.DF.02.07 | Numerical methods / Metode numerice | DF | 2 | - | 1 | - | - | 42 | | Vp | 4 | 70 |
| UO.AC.IC.ISPM.DC.02.08 | Foreign language II/ Limba straina II | DC | - | 2 | - | - | - | 28 | O.AC.IC.ISPM.C.01.07 | Vp | 2 | 28 |
| | Total | 26 | 11 | 5 | 10 | - | - | 364 | | - | 30 | 476 |
| | Facultative | | | | | | | | | | | |
| UO.AC.IC.ISPM.DC.02.09 | Physical education II/ Educație fizică II | DC | - | - | 1 | - | - | 14 | O.AC.IC.ISPM.C.01.09 | Vp | 1 | 14 |
| UO.AC.IC.ISPM.DC.02.10 | History of Arts / Istoria artei | DC | 2 | 2 | - | - | - | 56 | | Ex | 5 | 84 |

Legend: DF – fundamental subject; DS – specialty subject; DC – complementary subject; DD – domain subject.

RECTOR

PhD Prof. eng. Constantin Bungău

DEAN

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Duration of studies/ no. of credits: **4 years / 240**

Form of education: **full-time (F)**

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CURRICULUM PLAN

Year of study II

| Code | Subjects | Type | Semester III | | | | | Total no of hours | Conditioning | Type of evaluation | Credits | SI [hours] |
|------------------------|---|-----------|--------------|----------|----------|----------|----------|-------------------|------------------------|--------------------|-----------|------------|
| | | | C | S | L | P | Pr. | | | | | |
| | Compulsory | | | | | | | | | | | |
| UO.AC.IC.ISPM.DD.03.01 | Mechanics II / Mecanica II | DD | 2 | 1 | 1 | - | - | 56 | UO.AC.IC.ISPM.DD.02.03 | Ex | 5 | 84 |
| UO.AC.IC.ISPM.DD.03.02 | Strength of materials I/ Rezistenta materialelor I | DD | 3 | 2 | 1 | - | - | 84 | | Ex | 6 | 84 |
| UO.AC.IC.ISPM.DD.03.03 | Elements of architecture / Elemente de arhitectura | DD | 1 | - | - | - | - | 14 | | Vp | 2 | 42 |
| UO.AC.IC.ISPM.DD.03.04 | Hydraulics / Hidraulica | DD | 2 | - | 2 | - | - | 56 | | Ex | 5 | 84 |
| UO.AC.IC.ISPM.DD.03.05 | Thermotechnics of constructions / Termotehnic constructiilor | DD | 2 | - | 1 | - | - | 42 | | Ex | 4 | 70 |
| UO.AC.IC.ISPM.DD.03.06 | Installations in constructions/ Instalatii in constructii | DD | 2 | - | 1 | - | - | 42 | | Vp | 3 | 42 |
| UO.AC.IC.ISPM.DF.03.07 | Technical drawing and Infographics II/ Desen tehnic si infografica II | DF | 1 | - | 3 | - | - | 56 | UO.AC.IC.ISPM.DD.02.05 | Vp | 3 | 28 |
| UO.AC.IC.ISPM.DC.03.08 | Foreign language III/ Limba straina III | DC | - | 1 | - | - | - | 14 | UO.AC.IC.ISPM.DC.02.08 | Vp | 2 | 42 |
| | Total | 26 | 13 | 4 | 9 | - | - | 364 | | | 30 | 476 |
| | Facultative | | | | | | | | | | | |
| UO.AC.IC.ISPM.DC.03.09 | Physical education III/ Educație fizică III | DC | - | 1 | - | - | - | 14 | UO.AC.IC.ISPM.DC.02.09 | Vp | 1 | 14 |
| UO.AC.IC.ISPM.DC.03.10 | The study of form / Studiul formei | DC | 2 | 2 | - | - | - | 56 | | Ex | 5 | 84 |

| Code | Subjects | Type | Semester IV | | | | | Total no of hours | Conditioning | Type of evaluation | Credits | SI [hours] |
|------|----------|------|-------------|---|---|---|-----|-------------------|--------------|--------------------|---------|------------|
| | | | C | S | L | P | Pr. | | | | | |

| Compulsory | | | | | | | | | | | | | |
|-------------------------------------|---|----|-----------|-----------|----------|----------|----------|----------|----------------------------|----|-----------|------------|--|
| UO.AC.IC.ISPM.DD.04.01 | Strength of materials II/ Rezistentă materialelor II | DD | 3 | 1 | 1 | - | - | 70 | UO.AC.IC.ISP M.DD.03.02 | Ex | 5 | 70 | |
| UO.AC.IC.ISPM.DD.04.02 | Statics, dynamics and stability of constructions I/ Statica, dinamică și stabilitatea construcțiilor I | DD | 3 | 1 | 1 | | | 70 | | Ex | 5 | 70 | |
| UO.AC.IC.ISPM.DD.04.03 | Reinforced and prestressed concrete / Beton armat și precomprimat | DD | 3 | - | 2 | - | - | 70 | | Ex | 5 | 70 | |
| UO.AC.IC.ISPM.DD.04.04 | General course in constructions / Curs general de construcții | DD | 2 | 1 | | - | - | 42 | | Ex | 3 | 42 | |
| UO.AC.IC.ISPM.DS.04.05 | Installations Hydraulics I/ Hidraulică instalațiilor I | DS | 2 | - | 2 | - | - | 56 | UO.AC.IC.ISP M.DD.03.04 | Ex | 4 | 56 | |
| UO.AC.IC.ISPM.DC.04.06 | Foreign language IV/ Limba străină IV | DC | - | 1 | - | - | - | 14 | UO.AC.IC.ISP M.DC.03.08 | Vp | 2 | 42 | |
| UO.AC.IC.ISPM.DD.04.07 | Practice I/ Practică I | DD | - | - | - | - | - | 90 | | Vp | 3 | | |
| | Total | | 23 | 13 | 4 | 6 | - | - | | | 27 | 350 | |
| Optional (one from each set) | | | | | | | | | | | | | |
| Set 1 | | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DD.04.08 | Installations thermotechnics/ Termotehnică instalațiilor | DS | 2 | 1 | 1 | - | - | 56 | | Ex | 3 | 28 | |
| UO.AC.IC.ISPM.DD.04.09 | Hygrothermal Rehabilitation of Buildings/ Reabilitarea hidrotermică a Construcțiilor | | | | | | | | | | | | |
| | Total | | 4 | 2 | 1 | 1 | - | - | | | 3 | 28 | |
| Facultative | | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DD.04.10 | Aesthetics/ Estetică | DC | 2 | 2 | - | - | - | 56 | | Cv | 5 | 84 | |
| UO.AC.IC.ISPM.DC.04.11 | Physical Education IV/ Educație fizică IV | DC | - | 1 | - | - | - | 14 | UO.AC.IC.ISP M.DC.03.09 | Vp | 1 | 14 | |

Legend: DF – fundamental subject; DS – specialty subject; DC – complementary subject; DD – domain subject.

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CURRICULUM PLAN

Year of study III

| Code | Subjects | Type | Semester V | | | | | Total no of hours | Condi- tionin- g | Type of evaluat- ion | Credits | SI [hou- rs] |
|------------------------|---|------|------------|---|---|---|-----|-------------------------|------------------------|----------------------------|---------|--------------------|
| | | | C | S | L | P | Pr. | | | | | |
| | Compulsory | | | | | | | | | | | |
| UO.AC.IC.ISPM.DD.05.01 | Geotechnics/ Geotehnică | DD | 2 | - | - | 1 | | 42 | Ex | | 3 | 42 |
| UO.AC.IC.ISPM.DS.05.02 | Installations Hydraulics II/ Hidraulică instalațiilor II | DS | 3 | - | 2 | - | - | 70 | Ex | UO.AC.IC.ISPM. DS.04.05 | 5 | 70 |
| UO.AC.IC.ISPM.DD.05.03 | Reinforced concrete constructions / Constructii din beton armat | DD | 2 | - | - | 2 | - | 56 | Ex | UO.AC.IC.ISPM. DD.04.03 | 5 | 84 |
| UO.AC.IC.ISPM.DD.05.04 | Hydro-technical constructions/ Constructii hidrodilitare | DD | 2 | - | - | 1 | - | 42 | Cv | | 3 | 42 |
| UO.AC.IC.ISPM.DD.05.05 | Underground water | DD | 2 | - | - | 1 | - | 42 | Vp | | 3 | 42 |

| | | | | | | | | | | | | | |
|-------------------------------------|--|----|-----------|-----------|----------|----------|----------|----------|------------|-----------------------------|---|-----------|------------|
| | engineering / Ingineria apelor subterane | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DD.05.06 | Statics, dynamics and stability of constructions II/ Statica, dinamica si stabilitatea constructiilor II | DD | 3 | - | 2 | - | - | 70 | Ex | UO.AC.IC.IS PM.DD.04.0 2 | 5 | | 70 |
| UO.AC.IC.ISPM.DD.05.07 | Machinery and hydromechanical equipment / Masini si echipamente hidromecanice | DD | 2 | - | 1 | - | - | 42 | Vp | | 3 | | 42 |
| | Total | | 26 | 16 | - | 5 | 5 | - | 364 | | | 27 | 392 |
| Optional (one from each set) | | | | | | | | | | | | | |
| Set 1 | | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DS.05.08 | Hydrotechnical works / Amenajari hidrotehnice | DS | 2 | - | - | - | - | 28 | Vp | | 3 | | 56 |
| UO.AC.IC.ISPM.DS.05.09 | Water management systems /Sisteme de gospodarire a apelor | | | | | | | | | | | | |
| | Total | | 2 | 2 | - | - | - | - | 28 | | | 3 | 56 |
| Facultative | | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DC.05.10 | Second foreign language I/ A doua limba străină I | DC | - | 2 | - | - | - | 28 | Cv | | 2 | | 28 |
| UO.AC.IC.ISPM.DC.05.11 | Business engineering in constructions / Ingineria afacerilor în construcții | DC | 1 | 2 | - | - | - | 42 | Cv | | 4 | | 70 |

| Code | Subjects | Type | Semester VI | | | | | Total no of hours | Conditioning | Type of evaluation | Credits | SI [hours] | |
|-------------------------------------|--|------|-------------|-----------|----------|----------|-----------|-------------------|--------------|-------------------------|-----------|------------|------------|
| | | | C | S | L | P | Pr. | | | | | | |
| Compulsory | | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DS.06.01 | Water supply I/ Alimentări cu apă I | DS | 3 | - | 1 | 3 | - | 98 | Ex | | 7 | | 98 |
| UO.AC.IC.ISPM.DS.06.02 | Structures calculus of hydro-technical constructions/ Calculul structurilor construcțiilor hidroedilitare | DS | 4 | - | - | 4 | - | 112 | Ex | | 7 | | 84 |
| UO.AC.IC.ISPM.DD.06.03 | Metallic constructions/ Construcții metalice | DD | 2 | - | - | 2 | - | 56 | Ex | | 4 | | 56 |
| UO.AC.IC.ISPM.DD.06.04 | Foundations/ Fundații | DD | 2 | - | - | 1 | - | 42 | Ex | UO.AC.IC.IS PM.DD.05.01 | 4 | | 70 |
| UO.AC.IC.ISPM.DS.06.05 | Hydrology and hydrogeology/ Hidrologie si hidrogeologie | DS | 2 | - | 1 | - | - | 42 | Vp | | 2 | | 14 |
| UO.AC.IC.ISPM.DS.06.06 | Practice II (documentation for graduation diploma) / Practică II (documentare pt. elaborare proiect licenta) | DS | - | - | - | - | 90 | 90 | Cv | | 3 | | |
| | Total | | 25 | 13 | - | 2 | 10 | 90 | | | 27 | | 322 |
| Optional (one from each set) | | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DF.06.07 | Computer aided graphics in constructions/Grafica asistata de calculator in constructii | DF | - | - | 3 | - | - | 42 | Vp | | 3 | | 42 |
| UO.AC.IC.ISPM.DF.06.08 | Technical drawing and Infographics III / Desen tehnic si infografica III | | | | | | | | | | | | |
| | Total | | 3 | - | - | 3 | - | - | 42 | | | 3 | 42 |
| Facultative | | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DC.06.09 | Second foreign language II/ A doua limba străină II | DC | - | 2 | - | - | - | 28 | Cv | | 2 | | 28 |
| UO.AC.IC.ISPM.DC.06.10 | Communication techniques/ Tehnici de comunicare | DC | 2 | 2 | - | - | - | 56 | Cv | | 3.5 | | 42 |

Legend: DF – fundamental subject; DS – specialty subject; DC – complementary subject; DD – domain subject.

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CURRICULUM PLAN

Year of study IV

| Code | Subjects | Type | Semester VII | | | | | Total no of hours | Conditioning | Type of evaluation | Credits | SI [hours] |
|-------------------------------------|---|-----------|--------------|----------|----------|----------|----------|-------------------|--------------|------------------------|-----------|------------|
| | | | C | S | L | P | Pr. | | | | | |
| Compulsory | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DS.07.01 | Ecological impact of hydro technical construction works on the environment / Impactul ecol. al lucr. hidroed. asupra mediului | DS | 2 | - | - | - | - | 28 | Cv | | 2 | 28 |
| UO.AC.IC.ISPM.DS.07.02 | Pumping stations/Stații de pompare | DS | 2 | - | - | 2 | - | 56 | Ex | | 4 | 56 |
| UO.AC.IC.ISPM.DS.07.03 | Water Supply II/Alimentări cu apă II | DS | 3 | - | - | 2 | - | 70 | Ex | UO.AC.IC.ISPM.DS.06.01 | 6 | 98 |
| UO.AC.IC.ISPM.DS.07.04 | Sewerage/ Canalizări | DS | 3 | - | - | 2 | - | 70 | Ex | | 6 | 98 |
| UO.AC.IC.ISPM.DS.07.05 | Exploitation and maintenance of hydrotechnical works/ Exploatarea și întreținerea lucrărilor hidroedilitare | DS | 2 | - | - | - | - | 28 | Cv | | 3 | 56 |
| | Total | 18 | 12 | - | - | 6 | - | 252 | | | 21 | 336 |
| Optional (one from each set) | | | | | | | | | | | | |
| Set 1 | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DS.07.06 | Constructions safety to exceptional actions/Siguranta constructiilor la actiuni exceptionale | DS | 2 | 2 | - | - | - | 56 | Ex | | 4 | 56 |
| UO.AC.IC.ISPM.DS.07.07 | Seismical engineering/Ingineria seismica | | | | | | | | | | | |
| Set 2 | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DS.07.08 | Hydrotechnical constructions from reinforced concrete / Constructii hidroedilitare din beton armat | DS | 2 | - | - | 2 | - | 56 | Vp | | 5 | 84 |
| UO.AC.IC.ISPM.DS.07.09 | Metallic hydrotechnical constructions / Constructii hidroedilitare metalice | | | | | | | | | | | |
| | Total | 8 | 4 | 2 | - | 2 | - | 112 | | | 9 | 140 |
| Facultative | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DC.07.10 | Second foreign language III/A doua limba străina III | DC | - | 2 | - | - | - | 28 | Cv | UO.AC.IC.ISPM.DC.06.08 | 2 | 28 |
| UO.AC.IC.ISPM.DF.07.11 | Informatics applied in civil engineering I/Informatica aplicata in constructii I | DF | - | 2 | - | - | - | 28 | Cv | | 2 | 28 |

| Code | Subjects | Type | Semester VIII | | | | | Total no of hours | Conditioning | Type of evaluation | Credits | SI [hours] |
|-------------------------------------|--|------|---------------|---|---|---|-----|-------------------|--------------|----------------------|---------|------------|
| | | | C | S | L | P | Pr. | | | | | |
| Compulsory | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DS.08.01 | Wastewater treatment/Epurarea apelor uzate | DS | 2 | - | - | 3 | - | 70 | Ex | UO.AC.IC.ISPM.DS0704 | 5 | 70 |
| UO.AC.IC.ISPM.DD.08.02 | Organisation and management in constructions/Organizare si Management in Constructii | DD | 1 | - | - | 3 | - | 56 | Cv | | 3 | 28 |
| UO.AC.IC.ISPM.DS.08.03 | Technology for implementing construction works/ Tehnologia exec. lucr. de constr. | DS | 2 | - | 2 | - | - | 56 | Ex | | 3 | 28 |
| Optional (one from each set) | | | | | | | | | | | | |
| Set 1 | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DS.08.04 | 1 Special procedures for treating water/ Procedee speciale de tratare a apei | DS | 2 | - | - | 3 | - | 70 | Ex | | 4 | 42 |

| | | | | | | | | | | | | | |
|------------------------|--|-----------|----------|----------|----------|----------|----------|------------|----|-------------------------|--|-----------|------------|
| UO.AC.IC.ISPM.DS.08.05 | 2 Hydraulic systems in transient regime/ Sisteme hidraulice în regim tranzitoriu | | | | | | | | | | | | |
| | Set 2 | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DD.08.06 | Marketing and legislation in civil engineering/Marketing si Legislatie in constructii | DD | 2 | - | - | - | - | 28 | Ex | | | 3 | 56 |
| UO.AC.IC.ISPM.DD.08.07 | Economy and legislation in civil engineering/ Economie si Legislatie în construcții | | | | | | | | | | | | |
| | Set 3 | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DS.08.08 | Waste deposits/Depozite de deseuri | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DS.08.09 | Diffusion and dispersion of pollutants / ifuzia si dispersia poluantilor | DS | 2 | - | 1 | - | - | 42 | Vp | | | 3 | 42 |
| | Total | 10 | 6 | - | 1 | 3 | - | 140 | | | | 10 | 140 |
| UO.AC.IC.ISPM.DS.08.10 | Practice II (documentation for graduation diploma) / Practica pentru elaborarea proiectului de diploma | DS | - | - | - | - | 5 | 70 | Cv | | | 9 | |
| | Total | 18 | 5 | - | 2 | 6 | 5 | 252 | | | | 20 | 126 |
| | Facultative | | | | | | | | | | | | |
| UO.AC.IC.ISPM.DC.08.11 | Second foreign language/ A doua limba străina IV | DC | - | 2 | - | - | - | 28 | Cv | UO.AC.IC.ISP M.DC.07.08 | | 2 | 28 |
| UO.AC.IC.ISPM.DF.08.12 | Informatics applied in civil engineering / Informatica aplicata in constructii II | DF | - | 2 | - | - | - | 28 | Cv | UO.AC.IC.ISP M.DF.07.09 | | 2 | 28 |

Legend: DF – fundamental subject; DS – specialty subject; DC – complementary subject; DD – domain subject.

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Fundamental field of study: **ENGINEERING SCIENCE**

Degree domain: **CIVIL ENGINEERING**

Duration of studies/ no. of credits: **4 years / 240**

Form of education: **full-time (F)**

LEGEND:

C — courses; Ex — exam; P— project;
S — seminars; Cv — colloquium; Pr— practice;
L — practical works or/and laboratory Vp — continuous assessment; Np— grade for project

I. CERINȚE PENTRU OBTINEREA DIPLOMEI DE INGINER

- 212 credite la disciplinele obligatorii
- 28 credite la disciplinele optionale
- 10 credite la examenul de licenta (5 credite pentru proba de verificare a cunoștințelor teoretice la disciplinele fundamentale și de specialitate, 5 credite pentru susținerea proiectului de diploma)

II. STRUCTURA ANULUI UNIVERSITAR (în număr de săptămâni)

| Anul de studiu | Activități didactice | | Sesiuni de examene | | | | | Practica | Vacanțe | | |
|----------------|----------------------|---------|--------------------|----------------|------|---------------|-----------------|----------|---------|-----------|------|
| | Sem. I | Sem. II | Iarna | Restante iarna | Vara | Restante vara | Restante toamna | | Iarna | Primăvara | Vara |
| Anul I | 14 | 14 | 3 | 1 | 3 | 1 | 2 | - | 2 | 1 | 10 |
| Anul II | 14 | 14 | 3 | 1 | 3 | 1 | 2 | 3 | 2 | 1 | 10 |
| Anul III | 14 | 14 | 3 | 1 | 3 | 1 | 2 | 3 | 2 | 1 | 10 |
| Anul IV | 14 | 14 | 3 | 1 | 3 | 1 | 2 | 2 | 2 | 1 | - |

III. NUMĂRUL ORELOR PE SĂPTĂMÂNĂ LA DISCIPLINELE OBLIGATORII ȘI OPȚIONALE

| Anul de studiu | Semestrul I | Semestrul II |
|----------------|-------------|--------------|
| Anul I | 27 | 26 |
| Anul II | 26 | 27 |
| Anul III | 28 | 28 |

| | | |
|---------|----|----|
| Anul IV | 26 | 28 |
|---------|----|----|

| Nr. crt. | Disciplina | Nr. de ore | | | | Total | | Standard ARACIS (min / max.%) |
|----------|--------------|------------|------------|------------|------------|-------------|------------|-------------------------------|
| | | An I | An II | An III | An IV | | | |
| 1 | Obligatorii | 742 | 776 | 804 | 504 | 2826 | 88.20 | |
| 2 | Optionale | - | 56 | 70 | 252 | 378 | 11.80 | min. 10% |
| | TOTAL | 742 | 832 | 874 | 756 | 3204 | 100 | |
| 3 | Facultative | 210 | 140 | 154 | 112 | 616 | 19.22 | min. 10% |

| Nr. crt. | Disciplina | Nr. de ore | | | | Total | | Standard ARACIS (min / max.%) |
|----------|-----------------|------------|------------|------------|------------|-------------|------------|-------------------------------|
| | | An I | An II | An III | An IV | | | |
| 1 | Fundamentale | 490 | 56 | 42 | - | 588 | 18.35 | min. 17% |
| 2 | In domeniu | 210 | 636 | 392 | 84 | 1322 | 41.26 | min. 38% |
| 3 | De specialitate | - | 112 | 440 | 672 | 1224 | 38.20 | min. 25% |
| 4 | Complementare | 42 | 28 | - | - | 70 | 2.19 | max. 8% |
| | TOTAL | 742 | 832 | 874 | 756 | 3204 | 100 | |

IV.PONDEREA DISCIPLINELOR DIN CATEGORIILE OBLIGATORII+OPTIONALE

| | |
|---------------------------------|------------------------|
| - discipline obligatorii | (88.20 %), (2826 ore) |
| - discipline optionale | (11.80 %), (378 ore) |
| - discipline facultative | (19.22 %), (616ore) |
| DF - discipline fundamentale | (18.35 %), (588 ore) |
| DD - disciplină in domeniu | (41.26 %), (1322 ore) |
| DS - discipline de specialitate | (38.20 %), (1224ore) |
| DC - discipline complementare | (2.19 %), (70 ore) |

TOTAL 100% 3204 ore

Raportul CURS / APLICATII este 1554ore/1400 ore = 1.11

V.FLEXIBILITATEA PROCESULUI EDUCATIONAL

Flexibilitatea programului de studii este asigurata prin discipline optionale si facultative. Disciplinele optionale sunt propuse pentru semestrele 4, 5, 6, 7, 8 si sunt grupate in discipline optionale sau pachete optionale. Din fiecare pachet de discipline optionale, studentul alege una care devine obligatorie. Aceasta activitate se desfasoara inainte de inceperea anului universitar din care fac parte semestrele care contin disciplinele sau pachetele de discipline optionale.

VI.EXAMENUL DE DIPLOMA

1. Comunicarea temei proiectului de diploma: semestrul 6
2. Elaborarea proiectului de diploma: semestrul 8
3. Susținerea examenului de licența (proiect de diploma): iulie, septembrie
4. Structura examenului de diploma, cu următoarele componente de notare:
 - a) Verificarea cunoștințelor teoretice la disciplinele fundamentale și de specialitate;
 - b) Susținerea proiectului de diploma.
5. In vederea inscrierii la examenul de diploma se impune obținerea certificatului de competență lingvistică.

VII.UN PUNCT DE CREDIT NECESITA UN TOTAL DE 28 ORE / SEMESTRU DE ACTIVITATE DIDACTICA SI INDIVIDUALA

VIII.DISTRIBUIREA CREDITELOR PE COMPETENTE (TABELE RNCIS – Grila 1L)

Programul de studii: Inginerie sanitară și protecția mediului

| Nr crt | Disciplina** | Se m | Nr cre dite | Competențe profesionale | | | | | Competențe transversale | | |
|--------|--|------|-------------|-------------------------|-----|-----|----|----|-------------------------|-----|-----|
| | | | | C1 | C2 | C3 | C4 | C5 | CT1 | CT2 | CT3 |
| 1. | Analiză matematică | 1 | 4 | | 1,5 | 1,5 | 1 | | | | |
| 2. | Algebra liniară Geometrie analitica si diferentia | 1 | 4 | | 1,5 | 1,5 | 1 | | | | |
| 3. | Chimia apei | 1 | 3 | | 1,5 | 1,5 | | | | | |
| 4. | Programarea calculatoarelor si limbaje de programare I | 1 | 4 | 0,5 | 1 | 1 | 1 | | | | 0,5 |
| 5. | Topografie | 1 | 5 | | | 2 | 1 | 1 | | 1 | |
| 6. | Geometrie descriptiva | 1 | 5 | 3 | 2 | | | | | | |
| 7. | Limba straina I | 1 | 2 | | | | | | | | 2 |
| 8. | Fizica | 1 | 3 | | 1,5 | 1,5 | | | | | |
| 9. | Matematici speciale | 2 | 4 | | 1,5 | 1,5 | 1 | | | | |
| 10. | Geologie inginereasca | 2 | 3 | | | 1 | | 1 | | 1 | |

| | | | | | | | | | | | |
|-----|--|---|--------|-----|---|-----|-----|-----|--|-----|-----|
| 11. | Mecanică I | 2 | 5 | 2 | 3 | | | | | | |
| 12. | Programarea calculatoarelor si limbaje de programare II | 2 | 3 | 0,5 | 1 | 0,5 | 0,5 | | | | 0,5 |
| 13. | Desen tehnic si Infografica I | 2 | 4 | 2 | 2 | | | | | | |
| 14. | Materiale de construcții | 2 | 5 | 1 | 1 | 1 | | 1 | | | 1 |
| 15. | Metode numerice | 2 | 4 | 1 | 2 | | | 1 | | | |
| 16. | Limba straina II | 2 | 2 | | | | | | | | 2 |
| 17. | Mecanica II | 3 | 5 | 2 | 3 | | | | | | |
| 18. | Rezistenta materialelor I | 3 | 6 | 3 | 3 | | | | | | |
| 19. | Elemente de arhitectura | 3 | 2 | 2 | | | | | | | |
| 20. | Hidraulica | 3 | 5 | | 3 | 2 | | | | | |
| 21. | Termotehnica constructiilor | 3 | 4 | | 2 | 2 | | | | | |
| 22. | Desen tehnic si infografica II | 3 | 3 | 2 | 1 | | | | | | |
| 23. | Limba straina III | 3 | 2 | | | | | | | | 2 |
| 24. | Instalatii in constructii | 3 | 3 | 0,5 | 1 | 0,5 | 0,5 | 0,5 | | | |
| 25. | Rezistenta materialelor II | 4 | 5 | 2 | 3 | | | | | | |
| 26. | Statica, dinamica si stabilitatea constructiilor I | 4 | 5 | | 2 | 2 | | 1 | | | |
| 27. | Beton armat si precomprimat | 4 | 5 | 1 | 2 | 1 | | 0,5 | | | 0,5 |
| 28. | Curs general de constructii | 4 | 3 | 1 | 1 | 1 | | | | | |
| 29. | Hidraulica instalatiilor I | 4 | 4 | | 2 | 1 | | 1 | | | |
| 30. | Termotehnica instalatiilor / Reabilitarea higrotermica a Constructiilor | 4 | 3 | | 1 | 1 | 1 | | | | |
| 31. | Limba straina IV | 4 | 2 | | | | | | | | 2 |
| 32. | Practica I | 4 | 3 | | | 1 | 1 | | | 1 | |
| 33. | Geotehnică | 5 | 3 | | | 2 | | 0,5 | | 0,5 | |
| 34. | Hidraulica instalatiilor II | 5 | 5 | | 2 | 2 | | 1 | | | |
| 35. | Constructii din beton armat | 5 | 2 3 | 1 | 1 | 1 | | 1 | | | 1 |
| 36. | Constructii hidroedilitare | 5 | 3 | 0,5 | 1 | 1 | | 0,5 | | | |
| 37. | Ingineria apelor subterane | 5 | 3 | 1 | 1 | 1 | | | | | |
| 38. | Statica, dinamica si stabilitatea constructiilor II | 5 | 5 | | 2 | 2 | | 1 | | | |
| 39. | Amenajari hidrotehnice / Sisteme de gospodarire a apelor | 5 | 3 | 1 | 1 | 1 | | | | | |
| 40. | Masini si echipamente hidromecanice | 5 | 3 | | | 1,5 | 1 | | | | 0,5 |
| 41. | Alimentări cu apă I | 6 | 3 4 | 1 | 2 | 1 | 1 | 1 | | | 1 |
| 42. | Calculul structurilor construcțiilor hidroedilitare | 6 | 3 4 | 1 | 2 | 1 | 1 | 1 | | | 1 |
| 43. | Construcții metalice | 6 | 2 2 | 1 | 1 | 1 | | 0,5 | | | 0,5 |
| 44. | Fundații | 6 | 2 2 | 1 | 1 | 1 | | 0,5 | | | 0,5 |
| 45. | Hidrologie si hidrogeologie | 6 | 2 | | 1 | 1 | | | | | |
| 46. | Practică II (documentare pt. elaborare proiect licenta) | 6 | 3 | | | 1 | 1 | | | 1 | |
| 47. | Grafica asistata de calculator in constructii / Desen tehnic si infografica III | 6 | 3 | 2 | 1 | | | | | | |
| 48. | Impactul ecol. al lucr. hidroed. asupra mediului | 7 | 2 | | | 1 | | 1 | | | |
| 49. | Stații de pompare | 7 | 2 2 | 1 | 1 | 1 | | 1 | | | |
| 50. | Alimentări cu apă II | 7 | 3 3 | 1 | 1 | 1 | 1 | 1 | | | 1 |
| 51. | Canalizări | 7 | 3 3 | 1 | 1 | 1 | 1 | 1 | | | 1 |
| 52. | Exploatarea și întreținerea lucrărilor hidroedilitare | 7 | 3 | | 1 | | 1 | 1 | | | |
| 53. | Siguranta constructiilor la actiuni exceptionale / Ingineria seismica | 7 | 4 | | 1 | 1 | 0,5 | 1,5 | | | |
| 54. | Constructii hidroedilitare din beton armat / Constructii hidroedilitare metalice | 7 | 5 | 0,5 | 2 | 1 | 0,5 | 1 | | | |
| 55. | Epurarea apelor uzate | 8 | 2 | 0,5 | 1 | 1 | 1 | 1 | | | 0,5 |

| | | | | | | | | | | | |
|-----|---|---|--------|---|-----|---|-----|---|---|---|-----|
| | | | 3 | | | | | | | | |
| 56. | Organizare si Management in Constructii | 8 | 3 | | | 1 | 1 | | | 1 | |
| 57. | Tehnologia exec. lucr. de constr. | 8 | 3 | | | 1 | 1 | | | 1 | |
| 58. | 1 Procedee speciale de tratare a apei / 2 Sisteme hidraulice în regim tranzitoriu | 8 | 2 2 | | 1 | 1 | 0,5 | 1 | | | 0,5 |
| 59. | Marketing si Legislatie în constructii / Economie si Legislație în construcții | 8 | 3 | | | | 1 | 2 | | | |
| 60. | Depozite de deseuri / Difuzia si dispersia poluantilor | 8 | 3 | | 1.5 | 1 | | | | | 0,5 |
| 61. | Practica pentru elaborarea proiectului de diploma | 8 | 9 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |

Legendă: C1 ÷ C6 – Competențe profesionale; CT1 ÷ CT3 – Competențe transversale

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